

Abstract Submitted  
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**MoNA Calibration and Neutron Tracking** SHEA MOSBY, EVAN MOSBY, WARREN F. ROGERS, Westmont College, MONA COLLABORATION — The Modular Neutron Array (MoNA) at the NSCL consists of 144 2-m long scintillator-bars stacked 16 high by 9 layers deep. The array, used in conjunction with a large sweeper magnet, is designed to investigate properties of neutron rich nuclei near the drip-line. In order to properly track neutrons resulting from breakup reactions, it is imperative that all bars be carefully calibrated for position. While different PMT response times can be measured and corrected for by applying precise offsets to the data, there remains no method for measuring and correcting for slight physical misalignment of the individual bars. Weve developed a method which uses the straight-line paths created by cosmic muons passing through the array to “tie” all the bars together into one consistent position calibration. Weve developed an algorithm which filters high-multiplicity muon events from the data stream and plots their individual tracks through the array. A least square fit is applied to each track and the resulting individual bar offsets from the fitted line are statistically compiled. This method can be extended to provide a tool for distinguishing multiple scatterings of individual neutrons from higher multiplicity neutron events, which will be important for future experiments. Results will be presented. Work supported by NSF grant #PHY05-2010.

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